

Rec'd PCT/PTO 13 DEC 2004

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
24 December 2003 (24.12.2003)

PCT

(10) International Publication Number  
**WO 2003/106047 A3**

(51) International Patent Classification<sup>7</sup>: **B05C 17/03,**  
17/02, B05D 1/28

Shigeyuki [JP/JP]; c/o KANSAI PAINT CO., LTD.,  
33-1 Kanzaki-cho, Amagasaki-shi, Hyogo 661-8555 (JP).  
HIRAI, Haruo [JP/JP]; c/o KANSAI PAINT CO., LTD.,  
17-1 Higashi-yawata 4-chome, Hiratsuka-shi, Kanagawa  
254-8562 (JP).

(21) International Application Number:  
**PCT/JP2003/007427**

(22) International Filing Date: **11 June 2003 (11.06.2003)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(74) Agents: OGURI, Shohel et al.; Eikoh Patent Office, 28th Floor, ARK Mori Building, 12-32 Akasaka 1-chome, Minato-ku, Tokyo 107-6028 (JP).

(30) Priority Data:

2002-174595	14 June 2002 (14.06.2002)	JP
2003-012430	21 January 2003 (21.01.2003)	JP
2003-012466	21 January 2003 (21.01.2003)	JP
2003-012695	21 January 2003 (21.01.2003)	JP

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (*for all designated States except US*): KANSAI PAINT CO., LTD. [JP/JP]; 33-1, Kanzaki-cho, Amagasaki-shi, Hyogo-ken 661-0964 (JP).

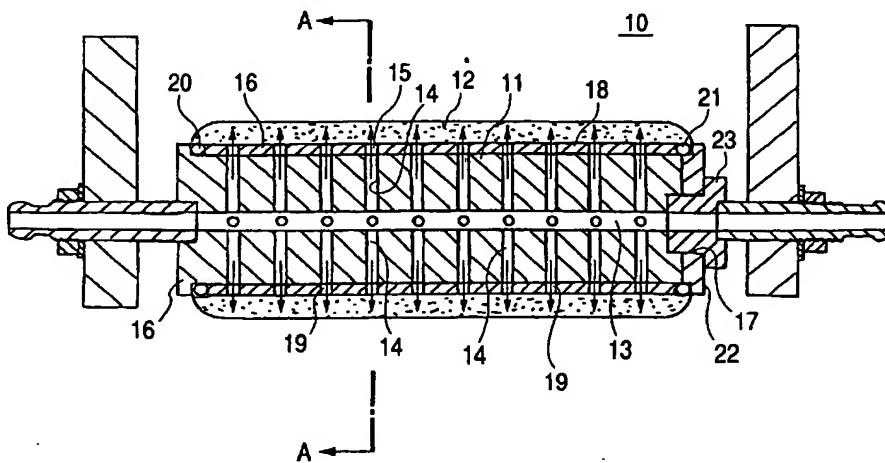
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): TSUSHI, Toshihiro [JP/JP]; c/o KANSAI PAINT CO., LTD., 33-1 Kanzaki-cho, Amagasaki-shi, Hyogo 661-8555 (JP). ABE

[Continued on next page]

(54) Title: PRESSURE FED COATING ROLLER, ROLLER COATING DEVICE, AUTOMATED COATING APPARATUS USING THIS DEVICE



WO 2003/106047 A3

(57) Abstract: An object of the present invention is to provide a coating device of the roller type which reduces a waste of coating material and distributes the coating material uniformly to the roller brush. The coating device includes a solid cylindrical body (11) being solid except an axial center hole (13), and radial holes (14) radially extended from a plurality of positions of the axial center hole (11), a roller brush (12) applied to the outer periphery of the solid cylindrical body (11), coating-material press feeding pipes (24) connected to both ends of the axial center hole (13) of the solid cylindrical body (11), and an arm part (31) for supporting the solid cylindrical body (11) at both ends of the solid cylindrical body (11). Those components are entirely supported by a turnable support mechanism (40) and a vertically movable support mechanism (50).



SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,  
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:  
15 April 2004

Published:

— with international search report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP 03/0127

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B05C17/03 B05C17/02 B05D1/28

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B05C B05D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 882 541 A (EASLEY SETH F) 21 April 1959 (1959-04-21) column 2, line 11 - line 29 ----	1
X	US 2 565 743 A (SCHAEFER ALBERT W) 28 August 1951 (1951-08-28) column 1, line 44 -column 2, line 19 ----	1,3
Y	EP 0 241 370 A (TILLEKE RAMY S GOONE) 14 October 1987 (1987-10-14) column 3, line 57 -column 4, line 28 ----	4
Y	EP 0 241 370 A (TILLEKE RAMY S GOONE) 14 October 1987 (1987-10-14) column 3, line 57 -column 4, line 28 ----	4
	-/-	

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

## ° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the International filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the International filing date but later than the priority date claimed

"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"Z" document member of the same patent family

Date of the actual completion of the International search

Date of mailing of the International search report

6 January 2004

28 JAN 2004

## Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

## Authorized officer

Juguet, J

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP 03 1427

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PATENT ABSTRACTS OF JAPAN vol. 011, no. 008 (C-396), 9 January 1987 (1987-01-09) -& JP 61 185357 A (KIMURASHIN KK), 19 August 1986 (1986-08-19) abstract ---	4
A	US 3 776 645 A (WALKER H) 4 December 1973 (1973-12-04) column 4, line 29 - line 36; figures 10-12 ---	2,5
A	PATENT ABSTRACTS OF JAPAN vol. 015, no. 421 (C-0878), 25 October 1991 (1991-10-25) -& JP 03 174275 A (NIPPON CONCRETE IND CO LTD; OTHERS: 03), 29 July 1991 (1991-07-29) abstract ---	2
A	PATENT ABSTRACTS OF JAPAN vol. 011, no. 317 (C-452), 15 October 1987 (1987-10-15) -& JP 62 106863 A (OHBAYASHIGUMI LTD), 18 May 1987 (1987-05-18) abstract ---	5-9
A	PATENT ABSTRACTS OF JAPAN vol. 008, no. 232 (C-248), 25 October 1984 (1984-10-25) -& JP 59 115760 A (TOUKIYOU DOURO ENJINIA KK), 4 July 1984 (1984-07-04) abstract ---	5-9
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 22, 9 March 2001 (2001-03-09) -& JP 2001 121068 A (MISAWA CERAMICS CORP), 8 May 2001 (2001-05-08) cited in the application abstract -----	16

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/JP 03/07427

### Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

#### Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claim : 1 3 4

Pressure fed roller with a core having an axial bore and a plurality of radial channels extending from this axial bore

2. Claim : 2

Pressure fed roller comprising a plurality of rollers elastically pulled to eachother

3. Claims: 5-15

Roller coating device for curved surfaces having supporting arm which can be pivoted in a vertical plane parallel to the axis of the roller.

4. Claims: 16-20

Coating method of a rectangular area in which a roller coats a plurality of adjacent parallel areas. In first step areas near three edges of the rectangular area are not coated, then finally the roller is passed on these areas, the discharge of coating material being stopped.

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International Application No

PCT/JP 007427

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US 2882541	A 21-04-1959	NONE		
US 2565743	A 28-08-1951	NONE		
EP 0241370	A 14-10-1987	FR FR AU EP WO	2596674 A1 2608071 A2 7232687 A 0241370 A1 8706112 A1	09-10-1987 17-06-1988 09-11-1987 14-10-1987 22-10-1987
JP 61185357	A 19-08-1986	JP JP	1754088 C 4043714 B	23-04-1993 17-07-1992
US 3776645	A 04-12-1973	NONE		
JP 03174275	A 29-07-1991	JP	2512816 B2	03-07-1996
JP 62106863	A 18-05-1987	NONE		
JP 59115760	A 04-07-1984	JP JP	1415896 C 62022656 B	10-12-1987 19-05-1987
JP 2001121068	A 08-05-2001	NONE		